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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/707,592	11/07/2000	Robert Cahn	1999-0415	9679

7590 09/27/2004

S H Dworetsky
AT&T Corp
PO Box 4110
Middletown, NJ 07748

EXAMINER

VIG, NARESH

ART UNIT PAPER NUMBER

3629

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/707,592

Applicant(s)

CAHN, ROBERT

Examiner

Naresh Vig

Art Unit

3629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2001-Mar - 12, 27.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This is in reference to response received by the office on 13 May 2004 to the office action mailed on 09 March 2004. There are 5 claims, claims 1 – 5 pending for examination.

Specification

The disclosure is objected to because of the following informalities:

The example [page 12 – 15] disclosed by the applicant in the originally filed application on 07 November 2000 does not read upon Table 1 [page 12], rates used in line 1 of page 14, Table 3 [page 15]. Application must clearly disclose the invention. Appropriate correction is required.

A substitute specification must not contain new matter. The substitute specification must be submitted with markings showing all the changes relative to the immediate prior version of the specification of record. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. An accompanying

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clean version (without markings) and a statement that the substitute specification contains no new matter must also be supplied. Numbering the paragraphs of the specification of record is not considered a change that must be shown.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 - 5 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

In the present case, claims 1 – 5 only recites an abstract idea. The recited steps of merely crating a graph, calculating a path for data transmission and calculating the total cost does not apply, involve, use, or advance the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper. These steps only constitute an idea of calculating total cost for data transmission.

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result. In the present case, the claimed invention produces longest and shortest path (i.e., repeatable) used in determining total cost for data transmission (i.e., useful and tangible).

Although the recited process produces a useful, concrete, and tangible result, since the claimed invention, as a whole, is not within the technological arts as explained above, claim 1 is deemed to be directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wide Area Network Design by Robert S. Cahn hereinafter known as Cahn.

Regarding claim 1, Cahn teaches a method for calculating an approximate cost of multi-protocol label switching (MPLS)based virtual private network (VPN) services (cost accounting for wide area networking service provider). Cahn teaches:

Computing (calculating) a greatest lower bound for the bandwidth used in an MPLS-based VPN [Star Design, page 64 – 72];

Computing (calculating) a least upper bound for the bandwidth used in an MPLS-based VPN [MST design, page 64 – 72]; and

Cahn does not explicitly combine the upper bound and the lower bound to produce (calculate) an estimate for the cost of the bandwidth [page 72]. However, Cahn combines the Star and MST to calculate costs [page 71 – 72].

Regarding claim 3, Cahn teaches a method for calculating an approximate cost of multi-protocol label switching (MPLS)-based virtual private network (VPN) services (cost accounting for wide area networking service provider). Cahn does not teach a computer program for the method. However, Official notice it taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made that it is known that businesses have computerized their manual processes to save cost. For example, payroll.

Computing (calculating) a greatest lower bound for the bandwidth used in an MPLS-based VPN [Star Design, page 64 – 72];

Computing (calculating) a least upper bound for the bandwidth used in an MPLS-based VPN [MST Design, page 64 – 72]

Cahn does not explicitly combine the upper bound and the lower bound to produce (calculate) an estimate for the cost of the bandwidth [page 72]. However, Cahn combines the Star and MST to calculate costs [page 71 – 72].

Regarding claim 5, Cahn teaches method for calculating an approximate cost of multi-protocol label switching (MPLS) based virtual private network (VPN) services (cost accounting for wide area networking service provider), comprising:

computing a greatest lower bound for the bandwidth used in an MPLS-based VPN, comprising the steps of:

Creating an auxiliary graph of Start and Finish nodes and one node for each node in the VPN that is saturated with inbound flow [page 64 – 65];

Creating a directed edge between the nodes representing a least cost of adding flow from a node which has flow left to place to a node which has capacity to receive the flow [page 64 – 65];

Calculating a shortest path algorithm to find the path from Start and Finish nodes giving an optimal way of serving the previously unserved unit of flow [page 64 – 72].

Outputting L as a greatest lower bound for the bandwidth used [page 72];

computing a least upper bound for the bandwidth used in an MPLS-based VPN, comprising the steps of:

Creating an auxiliary graph consisting of the nodes Start, Finish, and one node for each node in the VPN that is saturated with inbound flow [page 64 – 65];

Creating a directed edge between the nodes representing a greatest cost of adding flow from a node which has flow left to place to a node which has capacity to receive the flow [page 64 – 65];

Calculating a longest path algorithm to find the path from Start to Finish, giving a worst way of serving the previously unserved unit of flow [page 64 – 72];

Outputting U as a least upper bound for the bandwidth used [page 72];

Cahn does not teach combining the upper bound and the lower bound to produce an estimate for the cost of the bandwidth, comprising the step of setting a

$$\text{Total_cost} \approx \alpha \times U + (1 - \alpha) \times L$$

where α is a measure of risk of losing money by carrying a given customer's VPN.

However, Cahn teaches calculating U and L. Since the value of α can be different when calculated by plurality of users, official notice is taken that it would have been obvious to one of ordinary skill in the art at the time the invention was made that it is a business choice to determine how to measure risk of losing money and have their own formulae for creating business model.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wide Area Network Design by Robert S. Cahn hereinafter known as Cahn in view of Multiprotocol Label Switching: Enhancing Routing In The New Public Network hereinafter known as Juniper.

Regarding claim 2, Cahn does not teach computing a least upper bound includes a cut constraint (Class of Service aka CoS). However, Juniper teaches CoS in MPLS header.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cahn as taught by Juniper and implement CoS to implement queuing and discard algorithm.

Regarding claim 4, Cahn does not teach computing a least upper bound includes a cut constraint (Class of Service aka CoS). However, Juniper teaches CoS in MPLS header.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cahn as taught by Juniper and implement CoS to implement queuing and discard algorithm.

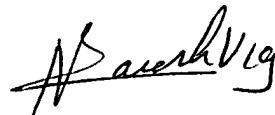
Conclusion

Applicant is required under 37 CFR '1.111 (c) to consider the references fully when responding to this office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naresh Vig whose telephone number is 703.305.3372. The examiner can normally be reached on M-F 7:30 - 5:00 (Alt Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on 703.308.2702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Naresh Vig
Patent Examiner
September 21, 2004